

CLAIMS:

What Is Claimed Is:

1. A system for providing real-time voice communication between devices connected to an Internet Protocol (IP) network and devices connected to a public switched telephone network (PSTN), comprising:
- a computer controlled switch adapted for connection to a local public switched telephone network; and
 - gate interface circuitry connected to the computer controlled switch and adapted for connection to the IP network.
2. The system of Claim 1 wherein said gate interface circuitry includes gateway circuitry for interfacing between the IP network and the voice circuits of the PSTN, and gatekeeper circuitry for performing address translation, admission control, bandwidth management and zone management between the IP network and the PSTN.
3. The system of Claim 2, further comprising:
- a voice response unit connected between the gate interface circuitry and the switch for receiving voice signals and converting them to digital tones for the switch.
4. The system of Claim 3, further comprising a message system connected to the IP network and the switch.
5. The system of Claim 4 wherein said message system receives voice messages and converts them to e-mail messages.
6. The system of Claim 5 wherein said message system receives facsimile messages and converts them to e-mail messages.

1 7. The system of Claim 6 wherein said message system receives e-mail messages
2 and converts them to voice messages.

1 8. The system of Claim 7 wherein the devices connected to the IP network are
2 computers or telephones with a gateway circuitry interface.

1 9. The system of Claim 8 wherein the computers connected to the IP network
2 include multi-media software for packetizing voice signals into a digital
3 format for transmission over the IP network.

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1 10. The system of Claim 1 wherein said computer controlled switch receives
2 incoming calls from the IP network or the PSTN and routes the incoming calls
3 to the PSTN or IP network.

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SUB A⁴ 1 11. The system of Claim 10 wherein said computer controlled switch receives an
2 incoming call from the IP network or the PSTN and simultaneously routes the
3 call to a plurality of pre-designated destinations which may be on the IP
4 network, on the PSTN, or on both the IP network and the PSTN.

1 12. The system of Claim 11 wherein said computer controlled switch performs
2 caller identification functions after routing the incoming call.

1 13. The system of Claim 1 wherein said computer controlled switch performs
2 Class 5 switching of incoming calls.

SUB A⁵ 1 14. A method of providing real-time voice communication between devices
2 connected to an Internet Protocol (IP) network and devices connected to the
3 public switched telephone network (PSTN), the steps of the method
4 comprising:

5 interfacing the digital data signals of the IP network with the voice
6 signals of the PSTN;

interfacing the control signals of the IP network with the PSTN to perform address translation, admission control, bandwidth management and zone management; and

routing calls between the devices connected to the IP network and devices connected to the PSTN.

15. The method of Claim 14, further comprising receiving voice signals from the IP network and converting them to signals for use by the PSTN.

16. The method of Claim 14, further comprising receiving voice messages and converting them to e-mail messages.

17. The method of Claim 14, further comprising receiving facsimile messages and converting them to e-mail messages.

18. The method of Claim 14, further comprising receiving e-mail messages and converting them to voice messages.

19. The method of Claim 14, further comprising receiving an incoming call from the IP network or the PSTN network and simultaneously routing the call to a plurality of predesignated destinations which may be on the IP network, on the PSTN network, or on both the IP network and the PSTN network.

20. The method of Claim 19, further comprising performing caller identification functions after routing the incoming call.